

A DISCOURSE concerning the most seasonable Time of Felling of Timber; Written by the advice of the Honorable Sam. Pepys Esq; Secretary of the Admiralty, and presented to his late Majesty. By Robert Plot LL. D. and R. S. Soci.

May it Please your MAJESTY,

WHEN I first imparted to your Majesty the manner of felling of Timber in the County of *Stafford*, with the advantage it might give to your Royal Navy, were all the Timber used in building your Fleet so felled; according to your Majesties command, I immediately (the same day) waited upon Mr. Secretary *Pepys* and Sir *Anthony Dean*, and communicated the Matter to them, who both promised me they would acquaint your Majesty I had so done, and give your Majesty an account of their present Thoughts of it: but the former, viz. Mr. Secretary *Pepys*, received so strong an impression of the usefulness of the Experiment, and thought it (after consideration) of that importance, that he desired me, the day following, further to consider this Subject, and see what might be added to what I had already written in my History of *Staffordshire* relating to it; and what material Observations made, why this Custom of *Staffordshire* and the Neighbouring Counties, might not be practiced here in the South of *England* as well as there; and so put all into Writing for your Majesties use.

For the performance whereof, with as much brevity as perspicuity will allow me, your Majesty is first desired to recollect what I told your Majesty in *May* last, that the Custom of felling Timber here in the South of *England*, differs from that of *Staffordshire*, only in two things, viz. In the time of Felling, and manner of Barking. It be-

A

ing

ing felled here in the Spring, as soon as the Sap is found to be fully up, by the Trees putting out, and then Bark'd after the Trees are prostrate, the Sap yet remaining in the Bodies of them: Whereas there it is first bark'd, (in the Spring as here) but before it is felled, the Trees yet living and standing all the Summer, and not felled till the following Winter, when the Sap is fully in repose: Whether of which Customs of felling Timber, either for Ships or other Buildings, is most eligible, is the Point to be discuss'd.

In the clearing whereof, May it please your Majesty first to take notice, that all Trees in the Spring Season (when usually we fell them in the South of *England*) and some time after, are pregnant, and spend themselves (as Animals do in their respective Off-springs) in the production of Leaves and Fruits, and so become weaker than at other times of the Year; their Cavities and Pores being then turgid with Juices or Sap, which (the Trees being felled at that time) still remain in the Pores, having now no manner of means of being otherwise spent, and there putrifie; Not only leaving the Tree full of these Cavities which render the Timber weak; But secondly, breeding a Worm as both *Pliny* and Mr. *Evelyn* testifie, that will so exceedingly prejudice it, that it becomes altogether unfit for strong Incumbencies, or other robust Uses. Thirdly, that all Timber fell'd at this time of Year, whether the Juices putrifie, or otherwise sweat forth, or dry away, is not only subject to rift and gape, but will shrink so considerably, that a Piece of such Timber of a Foot square will usually shrink in the breadth ^a of an Inch; than which, says *Vegetius*, nothing is more pernicious if used for the building of Ships. To which, Fourthly, The first and greatest Roman Emperor *Julius Caesar* adds, That tho' Ships may be made of such moist Timber fell'd in the Spring, yet they will certainly be Sluggs, not near so good Sailers as Ships made of Timber fell'd later in the Year.

In

In all which Circumstances I find most of the Antients so very well agree, that none of them advise the felling of Timber for any sort of use before Autumn at soonest ; others not till the Trees have born their Fruit, which says *Theophrastus*, must always be proportionably later, as their Fruits are ripe later in the Year : a third sort not till Mid-winter : not till *November* says *Palladius*, nay, not till the Winter Solstice, says the Wise *Cato* ; and then too in the decrease or wane of the Moon, between the 15th and 23d day of her Age, says *Vegetius*, or rather according to *Collumella* between the 20th and the New Moon. In general says *Theophrastus*, the Oak must be fell'd very late in the Winter, not till *December*, as the Emperor *Constantinus Pogonatus* positively asserts, the Moon too being then under the Earth, as 'tis for the most part in the day-time in the first part of its decrease. And the felling of Oak within those Limits, they call *Tempestiva cæsura*, *Felling Timber in Season*, which they all unanimously pronounce (if thus fell'd) will neither shrink, warp, nor cleave, nor admit of decay, in many years, it being as tough as Horn, and the whole Tree in a manner (as *Theophrastus* asserts) as hard and firm as the Heart ; with whom also agrees our Country-man Mr. *Evelyn*, if you fell not Oak (says he) till the Sap is in repose, as 'tis commonly about *November* and *December*, after the Frost has well nipped them, the very Saplings thus cut, will continue without decay, as long as the Heart of the Tree.

And the reason of this is given in short by *Varronius*, *quia aeris Hyberni vis comprimit & consolidat arbores*, because the Winter Air doth close the Pores, and so consequently consolidates all Trees, by which means the Oak (as He and *Pliny* both express it) will acquire a sort of Eternity in its duration ; and much more will it so, if it be barkt in the Spring, and left standing all the Summer, exposed to the Sun and Wind, as is usual in *Staffordshire*,

and the adjacent Counties, whereby they find by long Experience the Trunks of their Trees so dried and hardened, that the sappy part in a manner becomes as firm and durable, as the Heart it self.

Which way of barking and felling of Timber, tho' it were unknow to the Antients (as perhaps it is co all the World besides those few Counties) yet they seem not unacquainted with the rationality of the Practice: For *Seneca* observes the Timber most exposed to the cold Winds, to be most strong and solid, and that therefore *Chiron* made *Achilles's* Spear of a Mountain Tree. *Homer* also tells us that the Spear of *Agamemnon* was *εὐεμοτρεφὲς ἔγχος*, made of a Tree so exposed, for which *Didymus* gives the reason *ἀγὰρ τὰνέμφ* (says he) *πλείου ἀνμναζόμενα δένδρα, στερεά*, for that being continually Weather beaten, they become harder and tougher. And *Pliny* says expressly as much for the Sun, as they for the Wind, viz. That the Wood of Trees exposed to the Sun-shine, is the most fast and durable, for which reason 'tis too that the Great *Vitruvius* prefers the Timber on the South side the *Appennine*, (where it winds about and incloses *Tuscany* and *Campania*, and strongly reflects the constant Heats of the Sun upon it, as it were from a Concave;) incomparably before that, which grows upon the North side of the same Hill, in the shady moist Grounds: Of which his opinion he renders us this reason, for that the Sun does not only lick up the Superfluous moistures of the Earth, whence the Trees are supplied in such shady places with too great a quantity, but in great measure exhales the remaining Juices (after the production of Leaves and Fruits) out of the Trees themselves, rendering the Timber of them the more close, substantial and durable; which certainly it would do also as much more effectually, if the Bark were taken of in the Spring of the Year, as is accustomed in *Staffordshire*, where the
People

People are content to use this method in their provision of Timber, tho' but for private Uses.

Much rather should it be done then in so publick a concern as the building of Ships, where tough and solid Timber is much more necessary than in ordinary Buildings. Nor can I yet meet with any material Objection, either from *Staffordshire* Gentlemen (many of whom I have consulted about the Affairs since I informed your Majesty of the advantage of it) or from any other, why this Practice might not be used here in the South of *England*, as well as there. There is indeed an Act of Parliament 1 *Jac.* 1. chap. 22. whereby your Majestyies Subjects are forbid felling Timber for ordinary Uses (in consideration of the Tan) or any other time but between the first of *April* and last of *June*, when the Sap is up and the Bark will run, made on supposition (I guess) that should they have admitted felling Timber in any other Season, the Tanners would have wanted a supply of Bark. To which I readily answer, that I fear the Legislators that press'd the making that Act, were ignorant that the Bark might be taken off in the Spring, and that the Tree notwithstanding would live and flourish till the Winter following, as I have seen many in *Staffordshire*: So that tho' the Tree be not fell'd till the Winter Solstice, or *January* following, yet the Tanner is not at all defeated of his Tan, but has it here in as due Season as in any of the Southern Counties. The Legislator I say were ignorant of this, otherwise they would never have made an Act so pernicious to the whole Kingdom, as felling Tember at this Season is, for the sake of a few Tanners.

But notwithstanding this ignorance, yet then they were so wise as to except in that Act the Timber to be used in building of Ships, which may be fell'd in Winter, or any other time; as I am told all the ancient Timber remaining in the *Royal Sovereign* was, it being still so
hard

hard that 'tis no easie matter to drive a Nail into it, so that your Majesty has no need of giving your self the trouble of procuring the alteration or repeal of that Act, upon this account only, tho' it may possibly be desirable (because profitable to the Subject) upon many others.

'Tis true indeed that the barking or peeling the Tree standing, is somewhat more troublesome, and therefore somewhat more chargeable, than when they are prostrate; and that 'tis likely People therefore have usually fell'd their Timber, as well for Shipping as other uses, in the Spring of the Year, for the sake of the more easie and cheap barking it only, than any thing else. 'Tis true too, that Timber is harder to fell in Winter, it being now so compact and firm, that the Ax will not make so great impression, as it doth in the Spring, which will also encrease the price of felling some small matter, and its sawing afterwards; but how inconsiderable these things are in comparison of the great good your Majesty will reap by this manner of felling, (as is plain from what has been said above,) I need not acquaint your Majesty, it being (I think) self evident.

The greatest Objection, that I can foresee will be urged here in the South against this practice, is, That if the Timber be not fell'd till Mid-winter or *January*, where it grows in Copses and Woods, they cannot perhaps inclose their young Springs so soon as some may imagine needful, and therefore will be backward to fell their Timber (so growing) at that Season.

To which I answer, First, That the Timber so fell'd in the Wood or Copses may be easily carried off before the second Spring, and so the prejudice small, and the first it must be there where ever it is fell'd: but secondly, that which will quite remove this inconsiderable difficulty, is, That perhaps your Majesty may think it expedient, that no Timber whatsoever growing in Woods or Copses be at all bought into your Majesty's Yards, for
that

that Timber growing in such shady places, and so fenced from Sun and Wind, as Timber in Woods for the most part is, cannot be so good as that which comes from an exposed situation, such as it usually has in your Majesty's Forests, and in the Parks and Hedge-rows or open Fields of your Subjects, where too it is indifferent at least, if not better for the Proprietor, that it be fell'd in Winter (when the Grass and Corn is gone) than in the Spring it self: So that I cannot see what your Majesty has more to do in this Matter, in case your Majesty think fit to make use of this Method, than to order your Officers assigned for that purpose to buy all their Timber under such Conditions as to be fell'd in Winter; enjoyning the Proprietor (unless your Majesty think fit to buy the Bark) to take it off in the Spring in due time, making him some small allowance for the trouble he will have in peeling it standing.

Which is all I have met with further at present to inform your Majesty of, concerning this matter, wherein, if it should so happily fall out, that I have done your Majesty any the least Service, the internal Satisfaction I shall conceive from it, together with your Majesty's favourable Acceptance, will be an ample Reward to

Your Majestys, &c.